



# watershed resources registry





## History

- A collaborative national/regional pilot that grew out of the *Green Highways Partnership* and the Maryland State Highway Administration (MDSHA) proposal for making the Route 301 Project the *1<sup>st</sup> Green Highway* in Maryland.
- *Purpose 1*: Develop transferable framework for integrated watershed management to be to address the Federal Compensatory Mitigation Rule – ultimately enabling creation of “watershed banking” capability.
- *Purpose 2*: Achieve increased regulatory efficiencies through integration of CWA Sections 401, 402, and 404 (303(d), 319, etc.) in a watershed context – thereby also enabling greener (more sustainable) stormwater management.



**US Army Corps of Engineers®**



**US Army Corps of Engineers®**



## WRR Origin

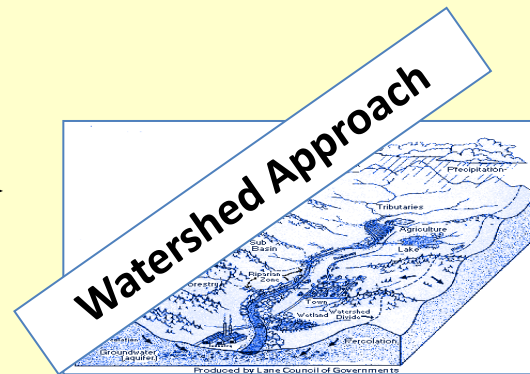
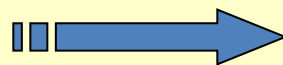
- Limitations of the traditional regulatory framework –  
*“my resource is most important”*



- Needed broad-based collaborative planning and protection of the watersheds to “Green” Route 301.
- Limited number of tools existed to assist regulators and others in deciding both *what* activity might be most beneficial to the watershed and *where* that activity ought to occur



## WRR Origin



## Advantages of a Watershed Approach

- Interdisciplinary approach that integrates solutions
- Addresses complex environmental relationships
- Uses naturally defined areas
- Holistically targets problems
- Ecologically based
- Promotes stakeholder & public involvement
- Compatibility with other programs



## What is the WRR?

- It is a comprehensive replicable framework and GIS-based targeting tool that:
  - Integrates and streamlines regulatory programs
  - Guides resource planners
  - Saves time and \$, and increases program efficiencies
  - Screens for preferred actions and maximizes watershed benefits
  - Is transparent, predictable and reliable
  - Facilitates multiagency input and coordination





## WRR: Three Key Elements

- WRR: a **collaborative, ongoing partnership** with EPA Region 3, several MD agencies, the Corps (Baltimore District and HQ) and several others
- WRR: **replicable scientific analysis framework** via a set of eight suitability analyses
- WRR: an **interactive website** that provides all users, including the general public, access to the findings





## Watershed Resources Registry: Web Application

**Watershed Resources Registry**

EPA USACE EWS FHWA SHA MDE DNR Help

**Location Details Results**

To begin, please follow the steps below:

- Use the 'Address Locator' tool or 'Zoom/Pan' tools above to find your location.
- Select the 'Find Opportunities' tool to locate resources within the study area.
- Select the 'Location Details' tool above and then click the location of interest on the map.

**Opportunities Results**

**Address Results**

**Map Contents**

0 3 6 12 18 24 Miles

Open WRR Tools





## WRR Suitability Analyses (SA)

- Upland Preservation
- Upland Restoration
- Wetland Preservation
- Wetland Restoration
- Riparian Zone Preservation
- Riparian Zone Restoration
- Preserve Healthy Stormwater Systems
- Restore Degraded Stormwater Systems





## Factors for Restoring Uplands

The best opportunities are found where

- Area is within 100 feet of a stream or water body;
  - Is near (within 200 feet) but not in a Wetland of Special State Concern;
  - Is within 100 feet (1pt) or 500 feet (½ pt) of a 303-D listed stream;
    - Is in an area that drains to Stream Use II, III or IV;
      - Is in a Tier II watershed;
  - Is in an area of potential Forest Interior Dwellings Species Habitat;
    - Is in a Green Infrastructure hub or corridor;
    - Is in a Sensitive Species Project Review Area (SSPRA);
      - Is in Chesapeake Bay Commission Critical Area;
  - Is near (within 200 feet of) but not in a protected Targeted Ecologic Area (GreenPrint);
  - Is in or near (within 200 feet) of an already protected area;
    - Is in a Targeted Ecologic Area (GreenPrint), whether protected or not;
  - within a Trust Fund Watershed [High Priority (1), Medium Priority (½)];
    - Is in a Blue Infrastructure priority watershed.
- and
- The area cannot already be forested;
    - It cannot be a wetland;
  - And it cannot be developed.





## Why is the WRR unique?

*Unlike many mapping and targeting tools...*

*There is extensive participation by federal, state and local government, including:*

EPA	USACE	FWS	MES
FHWA	MDE	MDNR	MDP
MDSHA	ICPRB	County Governments	

There is agency collaboration and program integration between:

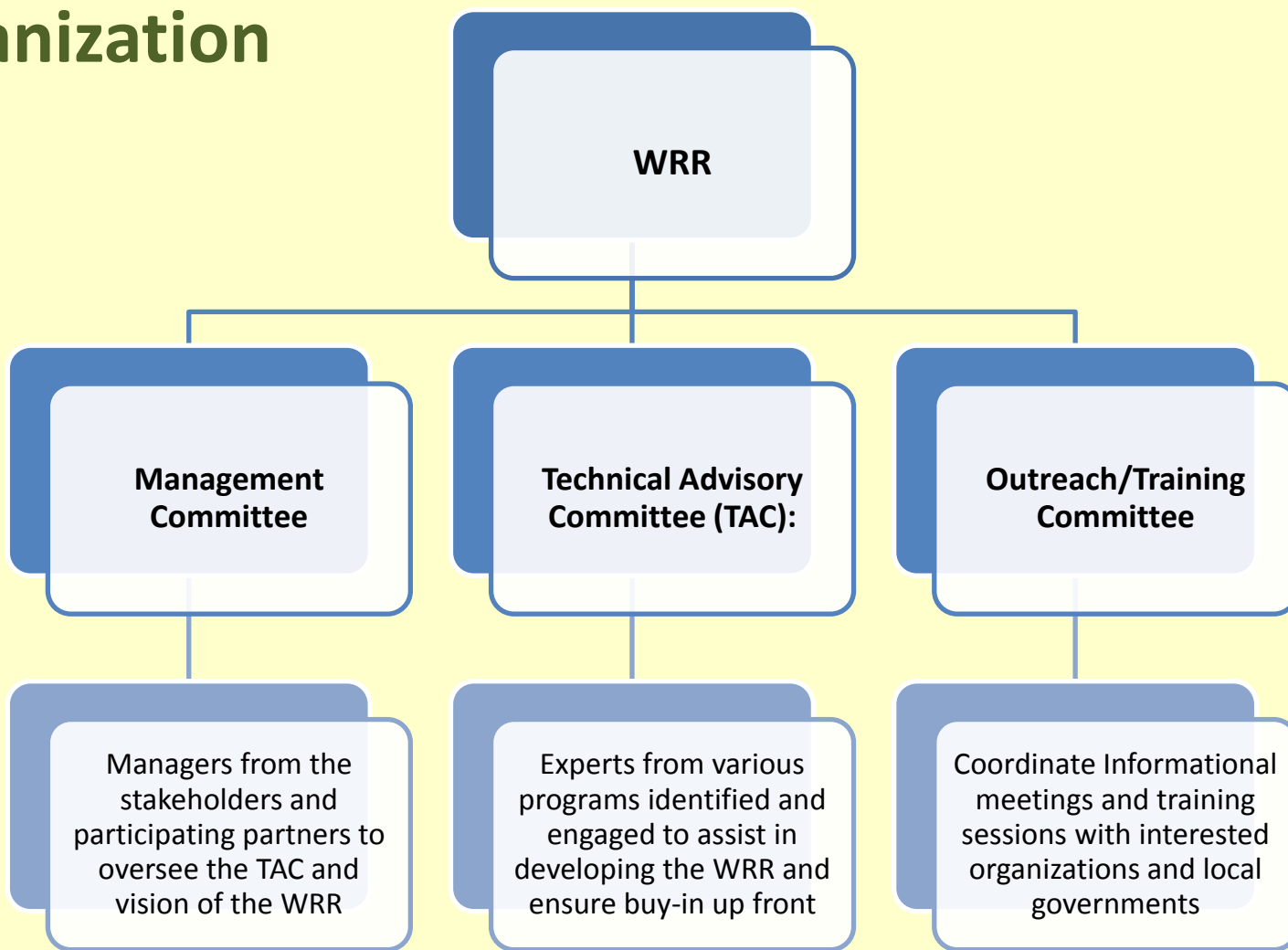
- **CWA 319, 401,402,404, 303(d)**
  - Watershed planning, permit review, mitigation assessments
  - TMDL and WIP applications
  - Stormwater management
- **NEPA review**
- **Green Print and Rural Legacy** priorities
- **Section 7** (Endangered Species Act)
- **Transportation and land use planning**
- **Resource conservation/ environmental resource planning**



... and more!



## Organization





## Desired Outcomes of WRR - Federal Agencies

**Integrate CWA authorities (both regulatory and non-regulatory) for synergy & improved results**

**Provide a comprehensive watershed approach to enable integrated planning, restoration and protection of watershed resources (including support for local decision-making)**

**Streamline the regulatory framework**

**Provide a strategic communication vehicle among agencies**





## *Desired Outcomes of WRR - State Agencies*

### Maryland Department of the Environment

- Help streamline the regulatory decision-making timeframe
- Help ensure compliance with new federal compensatory mitigation rule using the watershed approach

### Maryland Department of Natural Resources

- Identify restoration opportunities on state land
- Identify preservation opportunities for connecting Hubs and Corridors
- Support technology transfer

### Maryland State Highway Administration

- Streamline the regulatory decision-making timeframe (LDEPA)
- Support watershed-driven decision -making





## Role in Transportation Decision Making

SHA's Mission Statement:

*“Efficiently provide mobility for our customers through a safe, well-maintained and attractive highway system that enhances Maryland’s communities, economy and environment.”*



Maryland Department of Transportation

- Capital Program
- Roadway Maintenance
- Chesapeake Bay TMDL



# Capital Program

- Planning
  - environmental inventories, pre-planning project screening, and identification of potential mitigation and stewardship opportunities
- Design
  - avoidance/minimization, compensatory mitigation, and sustainable infrastructure
  - mitigation approval time - 36% efficiency gained\*
  - mitigation costs – approximately 37% efficiency gained\*

*\*over streamlined approach without WRR*





## Capital Program

	Costs	Time	Cost Savings with WRR	Time Savings with WRR
Site Search	\$50,000	4 months	\$37,500	3 months
Design	\$210,000	18 months	\$60,000	6 months
Agency Coordination/R regulatory Review	\$10,000	12 months	\$2,500	3 months
<b>Total</b>	<b>\$270,000</b>	<b>2.8 years</b>	<b><u>\$100,000</u></b>	<b><u>1 year</u></b>

\*Cost/time savings would be post Location Approval and includes only mitigation tasks.





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## Capital Program

Watershed Resources Registry - Windows Internet Explorer provided by EPA

http://www.mesgis.com/wrr/

File Edit View Favorites Tools Help

Watershed Resources Registry

EPA | SHA | MDE | DNR | USACE | FWS | Help

### Watershed Resources Registry

Find Opportunities | Location Details | X/Y Location | Address Locator | Print Map/Results

Location Details Results

Opportunities Results

Address Results

Map Contents

- Basemap
  - Watershed Resources Registry Opp
    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
    - Wetland Restoration
      - Not Suitable
      - 1 - 2
      - 2 - 4
      - 4 - 6
      - 6 - 8
      - 8 - 10
    - Wetland Enhancement
    - Riparian Preservation
    - Riparian Restoration
    - Sustainable Hydrology
    - All Models Union
  - Environmental Layers
  - Base Data

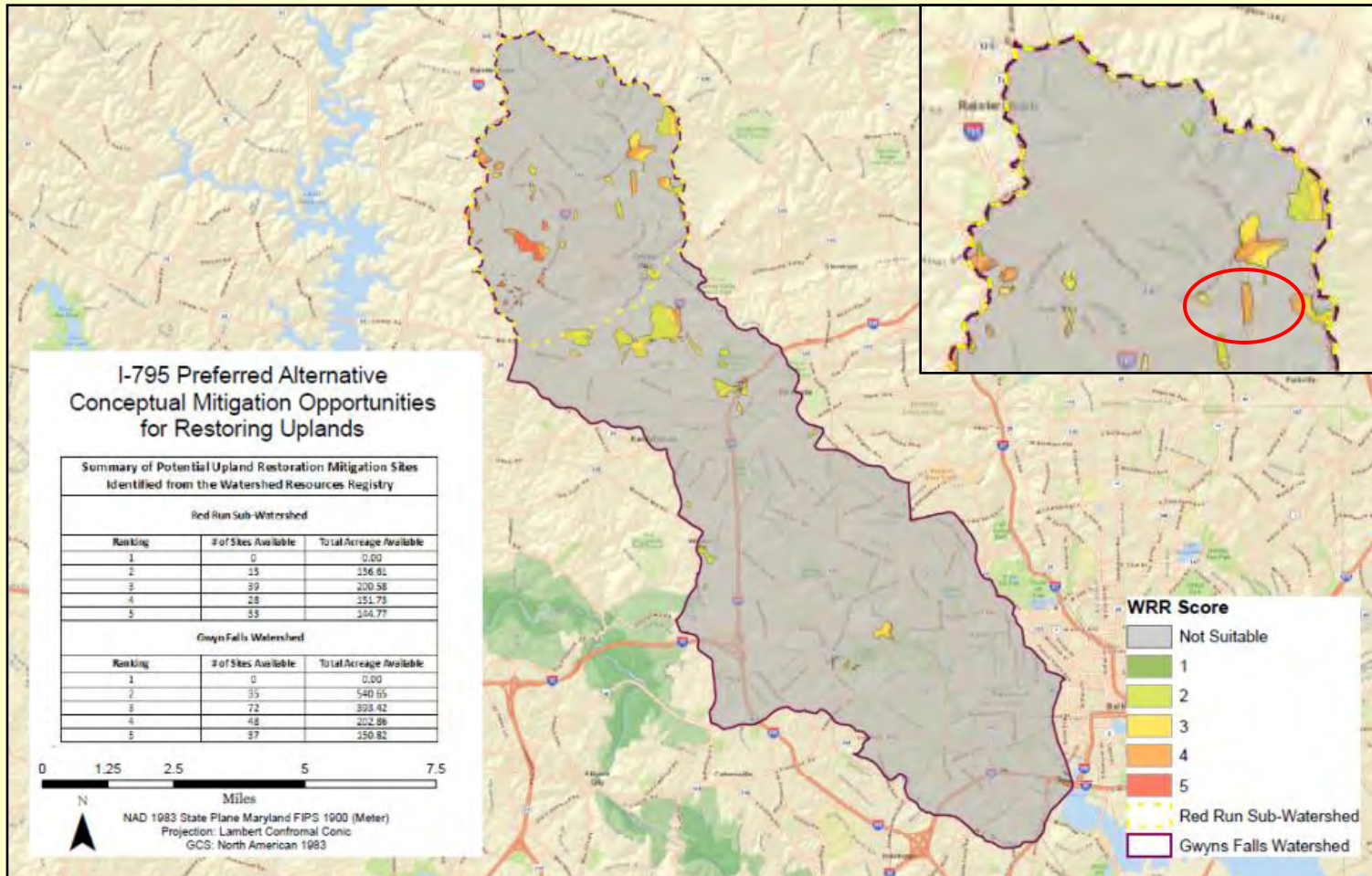
Done

Internet 100%



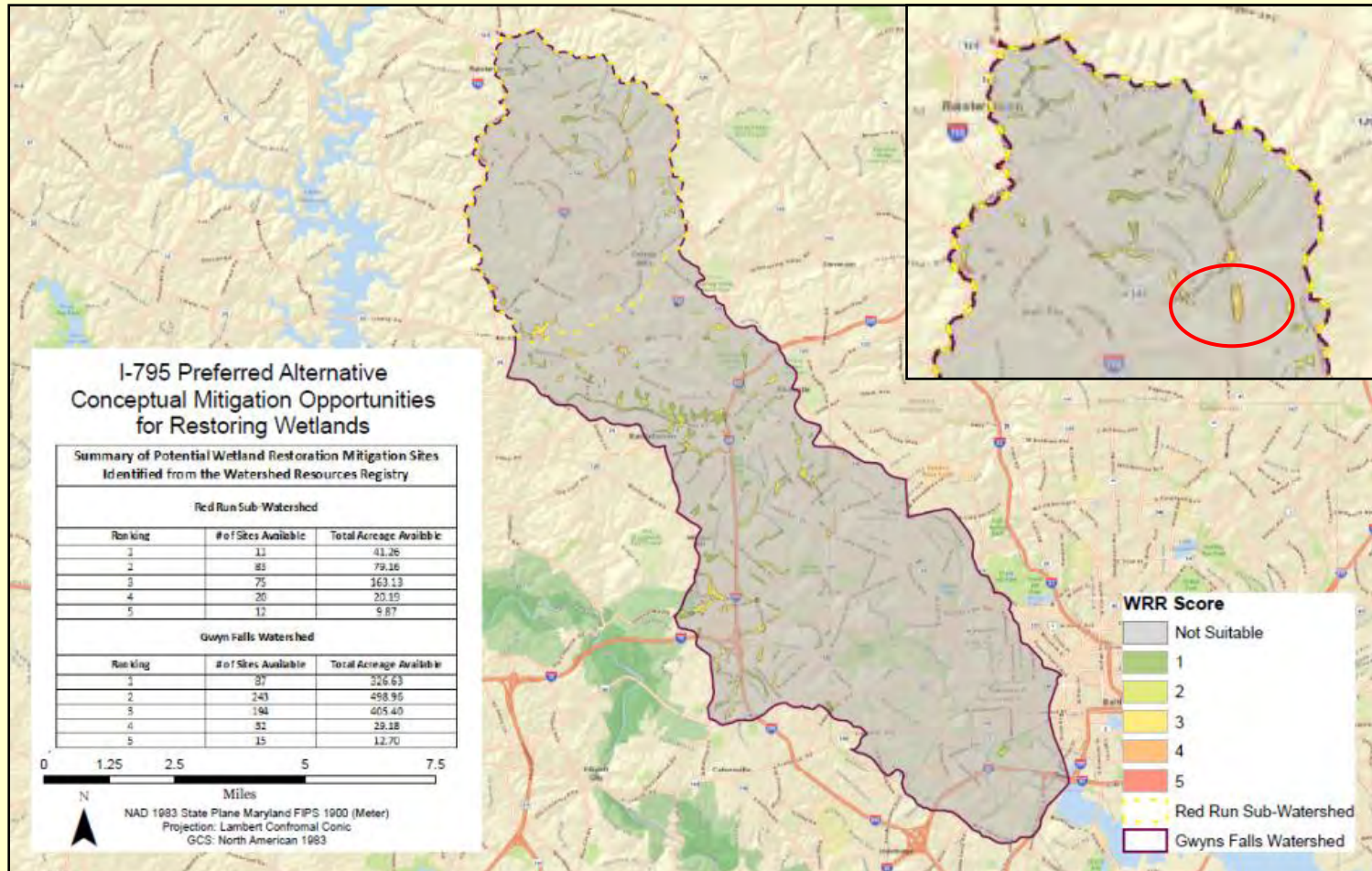


## Maximizing Mitigation Opportunities Upland Restoration Sites





## Maximizing Mitigation Opportunities Wetland Restoration Sites





watershed resources registry

# Land Conservation Case Study

MDNR Watershed Resources Registry Application





# Land Conservation in Maryland

## Program Open Space (POS)

- Established in 1969
- Funded by 0.5% of the Real Estate Transfer Tax



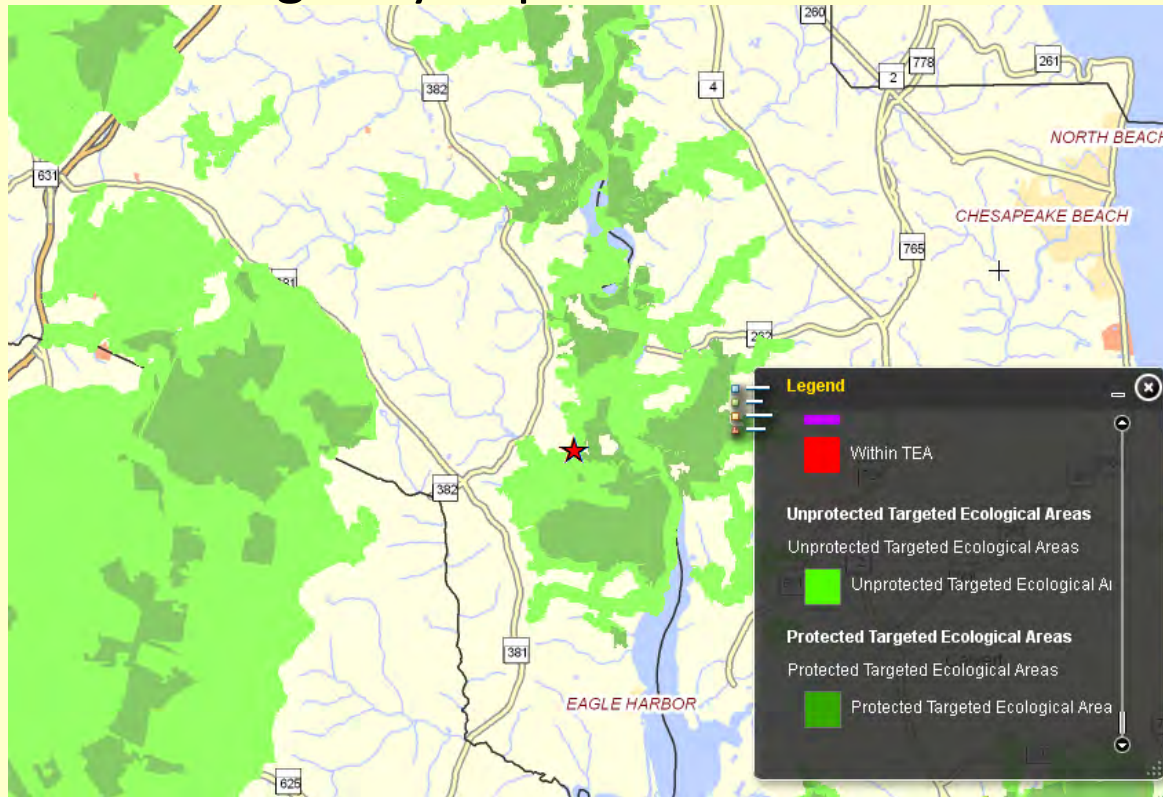
- Currently there have been 500,000 acres conserved and 4,000 parks created
- Conservation Objectives:
  - Ecological, Open Space and Recreation = POS/GreenPrint
  - Agricultural and Rural Landscapes

<http://www.greenprint.maryland.gov/programs.asp>



# Targeting Land Conservation

Targeted Ecological Areas are the most ecologically important areas in the State



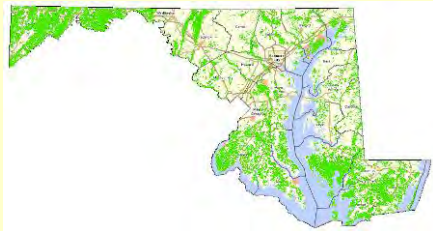
Preferred for Stateside Program Open Space funds



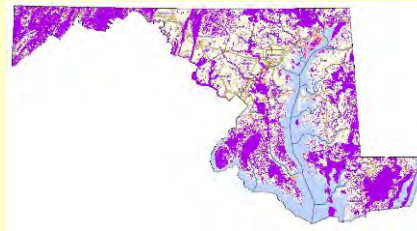


## 2011 Targeted Ecological Areas Best of the Best

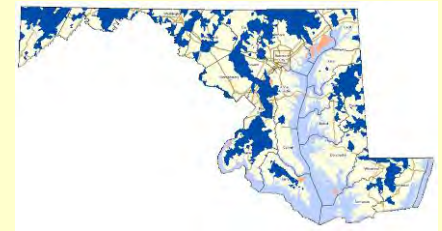
Green Infrastructure and Important Forests



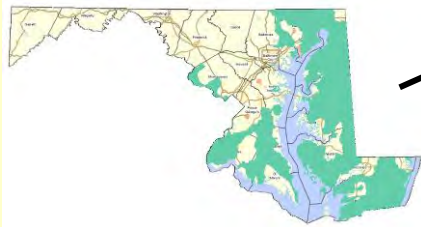
Wildlife and Rare Species Habitat



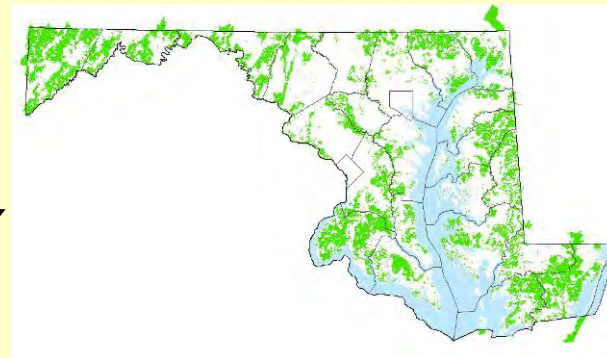
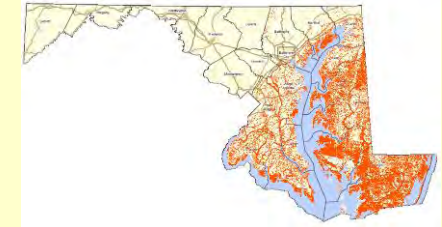
Non-tidal Streams and Fisheries



Tidal Fisheries, Bay and Coastal Ecosystems



Wetland Adaptation Areas



### Targeted Ecological Areas





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## Identify Eligible Projects

The screenshot shows the Watershed Resources Registry interface. At the top, there are navigation links for EPA, USACE, EWS, FHWA, SHA, MDE, DNR, and Help. The main header reads "Watershed Resources Registry". Below this is a "Location Details" panel with an "Address Locator" sub-panel. The "Address Locator" panel contains the following text and fields:

To begin, please use the Address Locator tool above to find your location in the study area. Select the 'Find Address' tool above and then click the location of interest on the map.

Street or Intersection:

Zip Code:

Below the form is a text input field:

The main map area displays a map of Maryland with county boundaries and names: Allegany, Washington, Frederick, Carroll, Baltimore, Howard, Montgomery, Anne Arundel, Prince George's, DC, Charles, Calvert, Dorchester, St. Mary's, Queen Anne's, Talbot, Caroline, Wicomico, Somerset, and Delaware. A scale bar at the bottom indicates 0, 3, 6, 12, 18, and 24 miles. A sidebar on the right contains a "Close WRR Tools" button and a menu with options: Find Opportunities, Location Details, X/Y Location, Zoom to County (dropdown), Zoom to Watershed (dropdown), Address Locator, and Print Map/Results. At the bottom right of the map area, there is a JavaScript code snippet: `javascript:$('#find("TaskResults1").clearAllNodes();`





# watershed resources registry

EPA | USACE | EWS | FHWA | SHA | MDE | DNR | Help



## Watershed Resources Registry

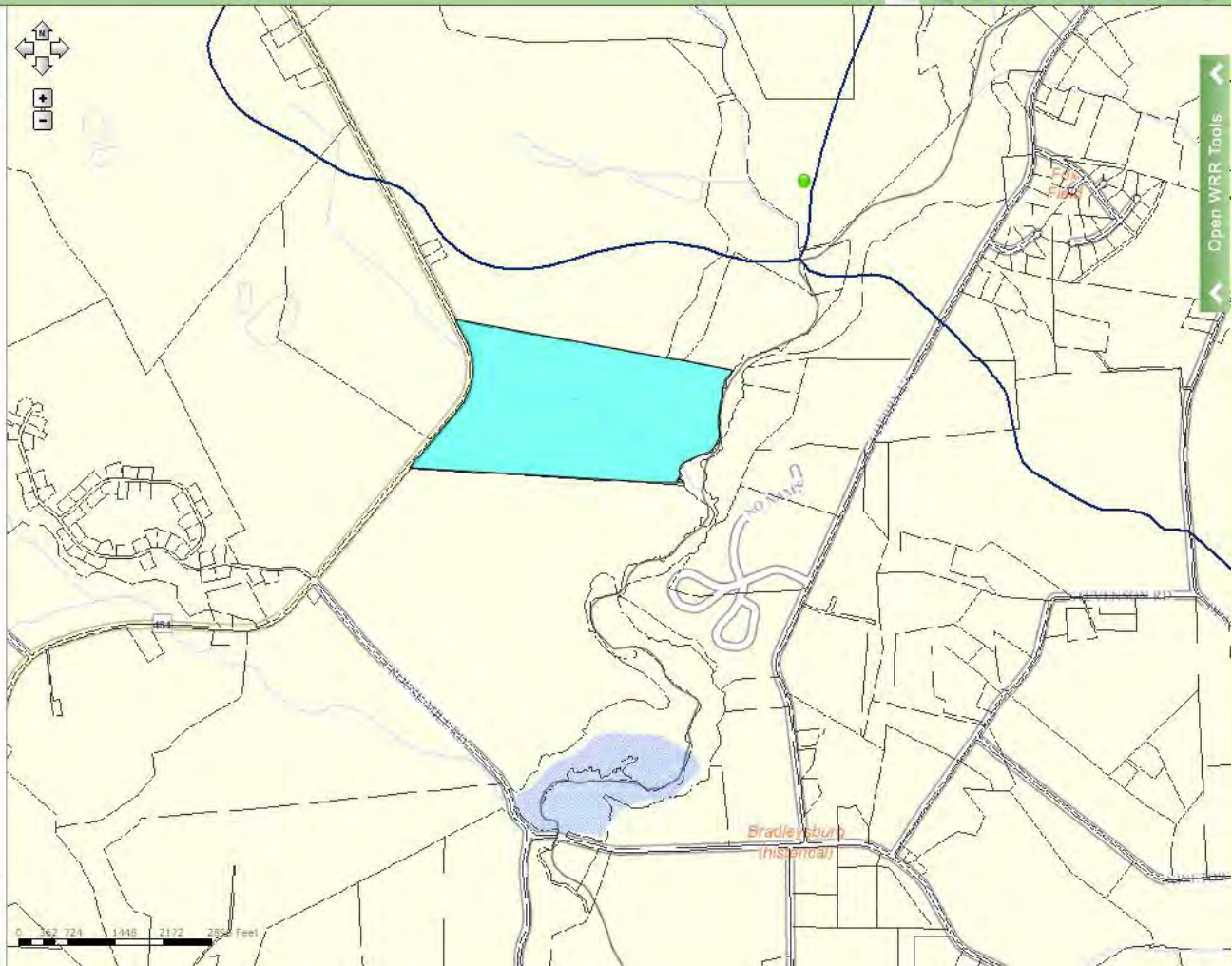
Location Details Results

Opportunities Results

Address Results

Clear All

- [http://sdatcert3.resiusa.org/rp\\_re](http://sdatcert3.resiusa.org/rp_re)
- [http://sdatcert3.resiusa.org/rp\\_re](http://sdatcert3.resiusa.org/rp_re)



javascript: AddToTaskResults(0);





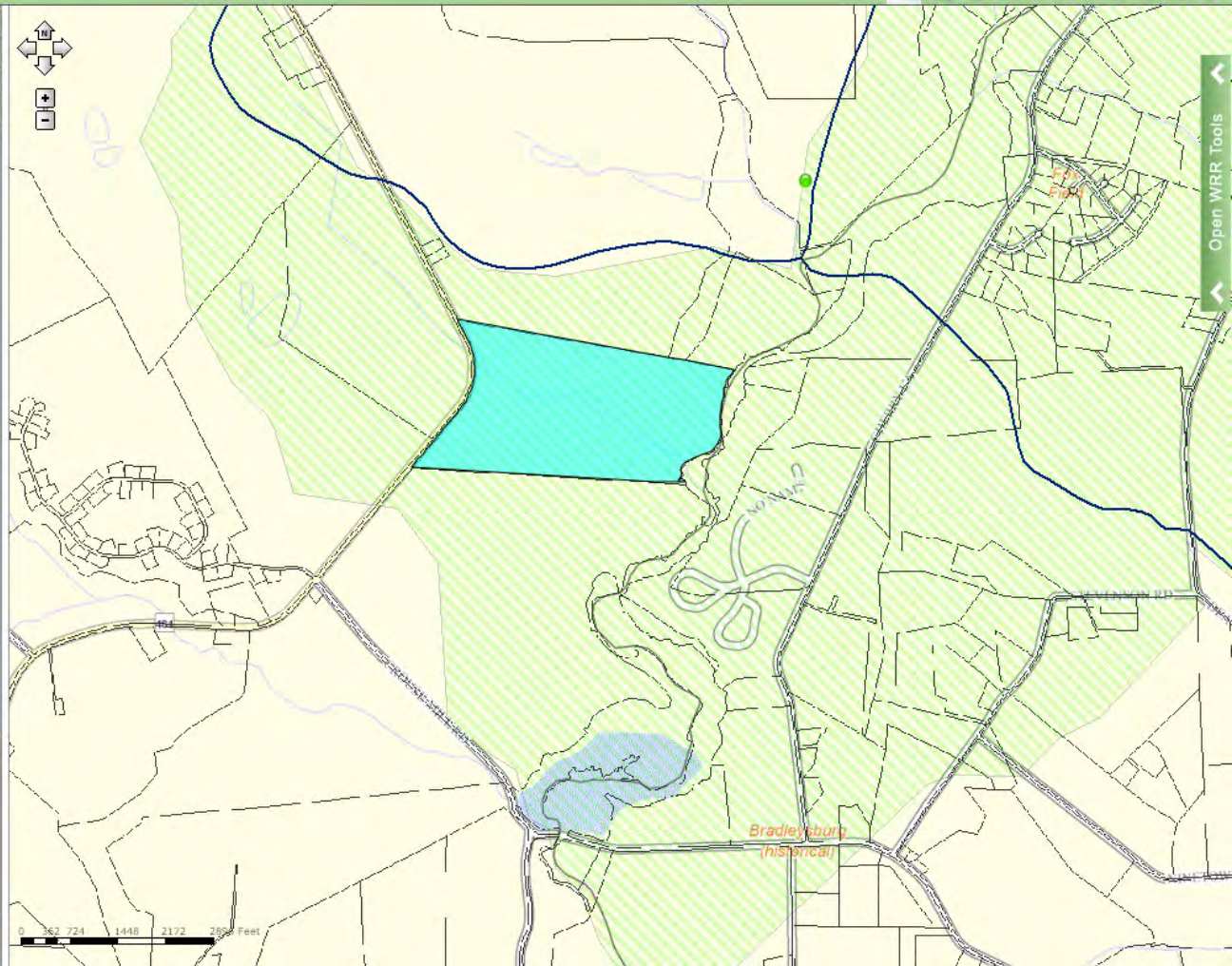
# watershed resources registry

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help



## Watershed Resources Registry

- Location Details Results
- Opportunities Results
- Address Results
- Map Contents
  - Parcel Boundaries / Real Property
    - Parcels
  - Basemap
    - Watershed Resources Improven
    - Watershed Characteristics
      - Waters/Streams
      - Water Quality Impairments
      - Physiographic Region
      - Geology
      - Wetland
      - Soils - Appears If Zoomed In
      - Green Infrastructure
      - Blue Infrastructure
    - Species Related Data
      - Sensitive Species Project
      - Targeted Eco Area
      - Forest Interior Dwelling S
    - Sea Level Rise
    - Base Data
      - Chesapeake Bay Critical
      - Protected Lands
        - Private Conservat
        - Environmental Tru
        - Federal Land
        - DNR Land
        - County Park
        - Agricultural Land F
        - Agricultural Land F





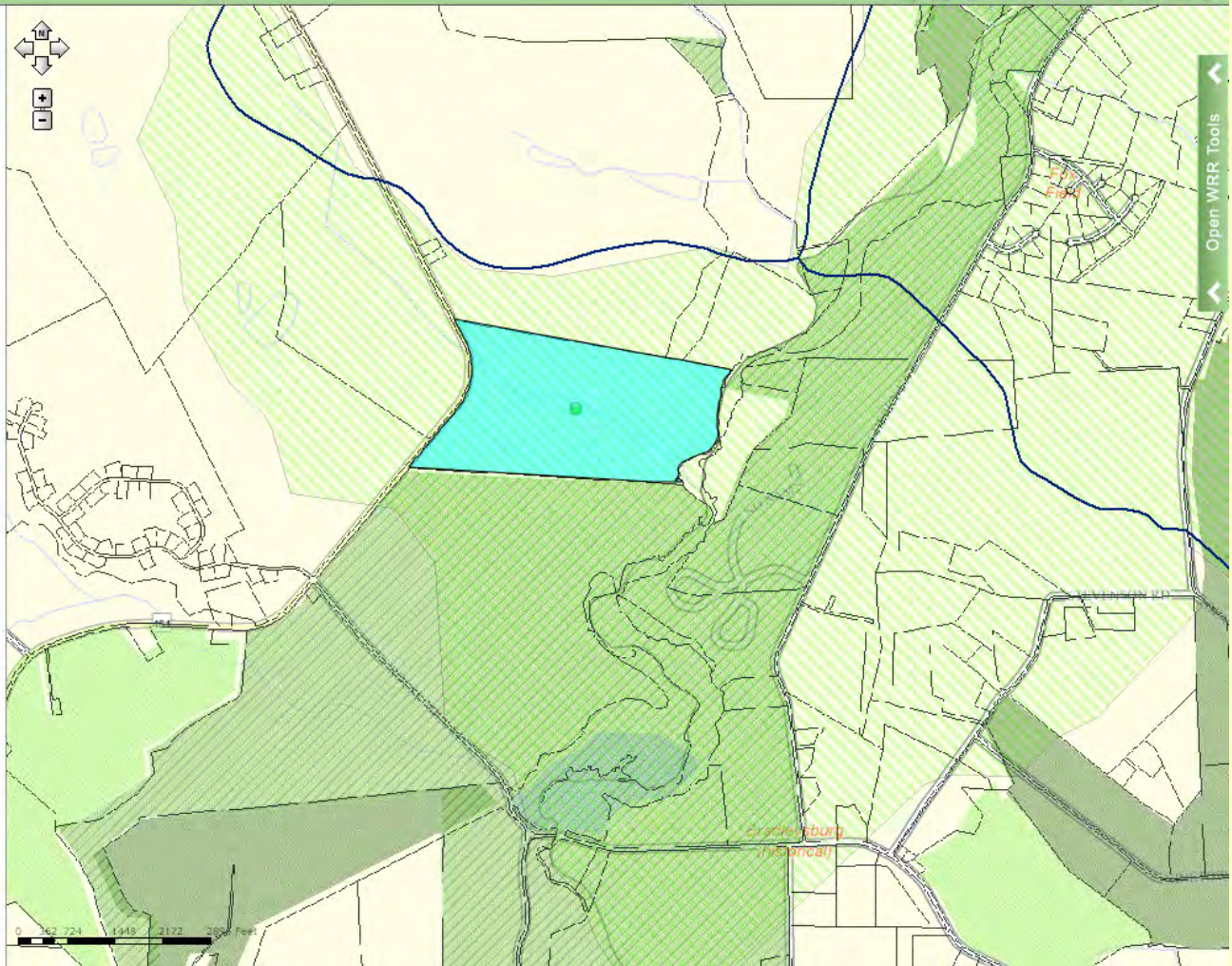
# watershed resources registry

EPA | USACE | EWS | FHWA | SHA | MDE | DNR | Help



## Watershed Resources Registry

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  - Base Data
    - Chesapeake Bay Critical
    - Protected Lands
      - Private Conservat
      - Environmental Tru
      - Federal Land
      - DNR Land
    - County Park
    - Agricultural Land f
    - Agricultural Land f
    - Rural Legacy Parc
    - Rural Legacy Area
  - Priority Funding Area
  - Land Use/Land Cover 20
  - Land Use/Land Cover 20
  - iMAP
  - ImageryBaseMapsEarthC
  - ESRI World Imagery
  - US Topo maps



Open WRR Tools



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**Watershed Resources Registry**

EPA | USACE | EWS | FHWA | SHA | MDE | DNR | Help

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Parcel Boundaries / Real Property
  - Parcels
- Basemap
  - Watershed Resources Improvemen
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  - Waters/Streams
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  - Physiographic Region
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  - Wetland
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- Sea Level Rise
- Base Data
  - Chesapeake Bay Critical
  - Protected Lands
    - Private Conservat
    - Environmental Tru
    - Federal Land
    - DNR Land
    - County Park
    - Agricultural Land f
    - Agricultural Land f

Map navigation controls: zoom in (+), zoom out (-), home, pan, search, info, print, full screen.

Open WRR Tools

Scale: 1:100,000



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## Watershed Resources Registry



### Location Details Results

#### Geology

[Metadata](#)

Name: Upland Deposit (Eastern Shore)

#### Wetlands

Wetlands of Special State Concern: Distance - 114 ft.

DNR: Type - Upland

FWS: Distance - 113 ft., Type - Freshwater Pond

Metadata: [WSSC](#) | [DNR](#) | [NWI](#)

#### Soils

[Metadata](#)

Soil Type: UoB

Hydric: Not hydric

Drainage: Other

Prime Farm Land: Not prime

#### Green Infrastructure

Location inside a hub

Location inside a gap

There are no corridors within 500 ft.

Metadata: [Hub](#) | [Gap](#) | [Corridor](#)

#### Blue Infrastructure

[Metadata](#)

There is no blue infrastructure within 500 ft.

#### Species Related Data

Sensitive Species ID: 84

Sensitive Species Group: GROUP 2

Location inside a targeted eco area.

There are no forest interior dwelling species areas within 500 ft.

Metadata: [SSPRA](#) | [Target Eco](#) | [FIDs](#)

#### Land Use/Land Cover

Land Use Type (2002): Cropland

Land Use Type (2007): Cropland

Metadata: [Metadata 1](#) | [Metadata 2](#)

### Opportunities Results

### Address Results

### Map Contents





# watershed resources registry

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help



## Watershed Resources Registry

### Location Details Results

### Opportunities Results

### Address Results

### Map Contents

- Parcel Boundaries / Real Property
  - Parcels
- Basemap
  - Watershed Resources Improven
    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
    - Wetland Restoration
      - Not Suitable
      - 1
      - 2
      - 3
      - 4
      - 5
    - Riparian Preservation
    - Riparian Restoration
    - Stormwater Natural Infra
    - Stormwater Compromise
  - Watershed Characteristics
    - Federal Hydrologic Unit C
    - Maryland 12 Digit Waters
    - Maryland 8 Digit Watersh
    - Stronghold Watershed
    - Tier II High Quality Strea
  - Waters/Streams
    - Stream
    - Floodplain
    - Water Body
  - Water Quality Impairments
    - Impaired



Open WRR Tools

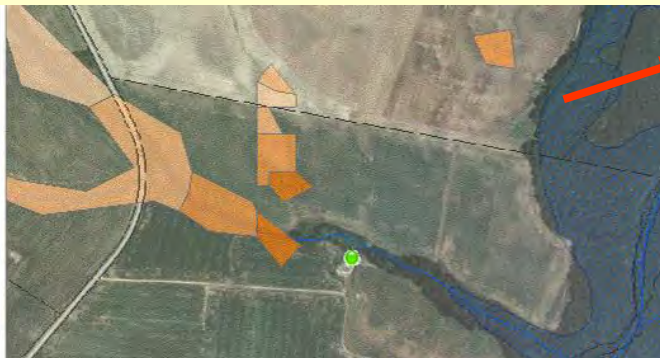


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## DNR Scores Project for Multiple Ecological and Management Benefits

- Scorecards presented to MD Board of Public Works
- Funding decisions based on ecologically defensible criteria
- WRR provides restoration assessments

- Watershed Resources Improved
  - Upland Preservation
  - Upland Restoration
  - Wetland Preservation
  - Wetland Restoration
    - Not Suitable
    - 1
    - 2
    - 3
    - 4
    - 5
  - Riparian Preservation
  - Riparian Restoration
  - Stormwater Natural Infra



Property:	County:	<b>Final Score</b> <b>110</b>
	Map / Parcel:	
In Targeted Ecological Area? <u>Yes</u>		
<b>Step #1: Ecological Value (100 points possible)</b>		
A. Landscape Score		
I. Overall Landscape Score (10 points possible for each of the following categories - total 40 points)		
a. Green Infrastructure		6.0
b. Rare Species		6.0
c. Aquatic Life - Tidal or Nontidal		8.6
d. Forests Important for Water Quality Protection		29.8
Subtotal :		
II. Targeted Ecological Area Bonus (20 points if more than 50 acres is in a TEA or 25% is in a TEA):		
		20
B. Parcel Score (10 points possible for each of the following categories - total 40 points)		
a. Green Infrastructure		7.5
b. Rare Species		3.0
c. Aquatic Life - Tidal (x) or Nontidal (		2.0
d. Forests Important for Water Quality Protection		9.7
Subtotal :		22.2
Step #1 Score:		72.0
<b>Step #2: Special Adjustment for Multiple Benefits (20 points possible)</b>		
A. Recreation Score (0, 5, or 10 points)		5
B. Historic or Cultural Value (0 or 5 points)		0
C. In-holding or Adjacency (0 or 5 points)		5
Step #2 Score:		10
<b>Step #3: Habitat Maintenance or Restoration Value Ranking ((0.2 x Step 1] points possible)</b>		
A. If the parcel requires proactive management to maintain habitat, OR provides a restoration opportunity, then multiply Step #1 total by 0.1.		7.2
B. If more than 5 acres of a designated Climate Change Habitat Adaptation Area falls within the parcel, then multiply Step #1 total by 0.1. (x acres from database)		7.2
Step #3 Score :		14.4
Subtotal of Steps #1, #2, and #3:		91.4
<b>Step #4: Management and Operations Ranking (Yes, No, or Undetermined)</b>		
A. Parcel desired by DNR parcel management is possible - Proceed with acquisition.		Yes
B. No known or reliable committed process for managing the parcel. STOP don't acquire.		
<b>Step #5: Consistency with Local Land Protection</b>		
Amount of protected land acres within one mile of parcel:	1,108	18.3
<b>Total of Steps 1 to 5 - FINAL SCORE</b>		<b>109.7</b>



## Restoration Designed and Implemented

WRR maps generated for field scale design and implementation

Watershed Resources Map - Mozilla Firefox

Watershed Resources Map

http://watershedresourcesregistry.org/wrr/Print.htm

Map Projection: State Plane Maryland (NAD83 - Meters)

**Selected Location - Coordinates**

- Latitude/Longitude: 38.98572,-75.94448

**Watershed Resources Improvement Opportunities**

- [Upland Preservation:](#) 4
- [Upland Restoration:](#) 4
- [Wetland Preservation:](#) Not Suitable
- [Wetland Restoration:](#) 4
- [Riparian Preservation:](#) 3
- [Riparian Restoration:](#) 4
- [Stormwater Natural Infrastructure Preservation:](#) 1
- [Stormwater Compromised Infrastructure Restoration:](#) 4

**Watershed Characteristics:**

- [View Watershed Profile](#)
- HUC: 020600050104
- HUC Name: Norwich Creek-Tuckahoe Creek
- Maryland 8 Digit Watershed: 02130405
- Stronghold Watershed: Location inside a stronghold watershed
- Maryland 12 Digit Watershed: 021304050533

**Selected Location Information**

**Waterways**

- Nearest Stream: Unnamed Tributary to Tuckahoe Creek
- Stream Use Designation: 1
- Distance: 83 ft.
- Metadata: [Stream Use Designations](#)

**Soils**

- [Metadata](#)
- Soil Type: LZ
- Hydric: Hydric
- Drainage: Very Poorly Drained
- Prime Farm Land: Not prime



# Using the Watershed Resource Registry (WRR) to Evaluate Proposed Wetland and Waterway Impacts and Mitigation





# The WRR can be used by regulatory agencies and applicants to evaluate mitigation . . .

- Assist in finding a mitigation site
- Evaluate ecological benefits of a proposed mitigation site (permittee, bank, or ILF)
- Compare different proposed mitigation sites



## Mitigation Example

- Linear project with large impacts
- Large portion of impacts (76 acres) within Mattawoman wetland
- Tier II watershed
- Difficult to find enough wetland mitigation





## Search for . . . Tier II watersheds within Mattawoman watershed

The screenshot shows the Watershed Resources Registry interface. At the top, there are navigation links for EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. The main header reads "Watershed Resources Registry". Below the header is a search bar and a map area. The map displays a "Proposed Alignment" in orange, overlaid on a green stream network. A red arrow points to a specific location on the alignment. The legend on the left side of the map is expanded to show "Map Contents". Under "Watershed Characteristics", the "Tier II High Quality Stream" option is checked and highlighted with a red arrow. Other checked options include "Maryland 8 Digit Watershed". The map also shows a scale bar and navigation controls.





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## Search for . . . wetland restoration and riparian restoration opportunities

**Watershed Resources Registry**

Navigation: EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

Map Contents:

- Parcel Centroids/Account IDs
- Parcel Boundaries / Real Property
- Basemap
  - Watershed Resources Improvements
    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
    - Wetland Restoration
    - Riparian Preservation
    - Riparian Restoration
    - Stormwater Natural Infrastructure
    - Stormwater Compromise
  - Watershed Characteristics
    - Federal Hydrologic Unit C

Map Scale: 0 864 1728 3456 5184 6912 Feet





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## Largest potential wetland restoration in this Tier II watershed

**Watershed Resources Registry**

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

Location Details Results

Opportunities Results

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    - Riparian Restoration
    - Stormwater Natural Infra
    - Stormwater Compromise
  - Watershed Characteristics
    - Federal Hydrologic Unit C
    - Maryland 12 Digit Waters

0 192 384 768 1152 1536 Feet

Open WRR Tools





## Look at imagery - site is agriculture

**Watershed Resources Registry**

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

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    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
    - Wetland Restoration
    - Riparian Preservation
    - Riparian Restoration
    - Stormwater Natural Infra
    - Stormwater Compromise
  - Watershed Characteristics
    - Federal Hydrologic Unit C

0 194 388 776 1164 1552 Feet

Open WRR Tools





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## Can look at other GIS layers . . .

The screenshot shows the Watershed Resources Registry web application. At the top, there is a navigation bar with links to EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. Below this is the title "Watershed Resources Registry" and a search bar. The main map area displays a satellite-style base map with several GIS layers overlaid, including wetlands (green hatched areas) and water bodies (blue hatched areas). A legend on the left side of the map lists various layers, with "Basemap" and "Wetland" checked. The legend items are:

- Basemap
- Watershed Resources Improvemen
- Watershed Characteristics
- Waters/Streams
- Water Quality Impairments
- Physiographic Region
- Geology
- Wetland
  - Wetlands of Special State
  - NWI
  - DNR
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure

The map also includes a scale bar at the bottom indicating distances in feet (0, 212, 424, 848, 1272, 1696 Feet) and a vertical "Open WRR Tools" button on the right side.





# watershed resources registry

## Can look at other GIS layers . . .

The screenshot shows the Watershed Resources Registry web application. At the top, there is a navigation bar with links to EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. Below this is a header with the title "Watershed Resources Registry" and a small landscape icon. The main interface is divided into a left sidebar and a central map area. The sidebar contains sections for "Location Details Results", "Opportunities Results", "Address Results", and "Map Contents". The "Map Contents" section is expanded, showing a list of GIS layers with checkboxes. The "Green Infrastructure" layer is checked, and its sub-layers "Corridor", "Gap", and "Hub" are also checked. Other layers include "Physiographic Region", "Geology", "Wetland", "Soils - Appears If Zoomed In", "Blue Infrastructure", "Species Related Data", "Sea Level Rise", and "Base Data". The map area displays an aerial view with green infrastructure overlays. A scale bar at the bottom of the map indicates distances from 0 to 1696 feet. On the right side of the map, there is a vertical button labeled "Open WRR Tools".





# watershed resources registry

## Location Details shows important surrounding resources

The screenshot shows the Watershed Resources Registry interface. At the top, there is a navigation bar with links for PPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. Below this is a header with the title 'Watershed Resources Registry' and a small landscape icon. The main content area is divided into a sidebar on the left and a map on the right. The sidebar contains 'Location Details Results' with a list of 'Watershed Resources Improvement Opportunities' and 'Watershed Characteristics'. The map shows a satellite view with various colored overlays representing different resources. A 'Location Details' popup is visible on the map, showing the current location's latitude and longitude, and a list of 'Watershed Resources Improvement Opportunities' for that specific location. A red circle highlights the 'Location Details' option in the 'Find Opportunities' menu on the right side of the map.

**Location Details Results**

**Watershed Resources Improvement Opportunities**

- [Upland Preservation:](#) 4
- [Upland Restoration:](#) 4
- [Wetland Preservation:](#) Not Suitable
- [Wetland Restoration:](#) 4
- [Riparian Preservation:](#) 3
- [Riparian Restoration:](#) 5
- [Stormwater Natural Infrastructure Preservation:](#) 1
- [Stormwater Compromised Infrastructure Restoration:](#) 2

**Watershed Characteristics:**

- [View Watershed Profile](#)
- HUC: 020700110101
- HUC Name: Piney Branch-Mattawoman Creek
- Maryland 8 Digit Watershed: 02140111
- Maryland 12 Digit Watershed: 021401110784
- Tier II High Quality Stream Catchment: Old Womans Run 1

**Opportunities Results**

**Address Results**

**Map Contents**

**Location Details Results**

**Watershed Resources Improvement Opportunities**

- [Upland Preservation:](#) 4
- [Upland Restoration:](#) 4

**Find Opportunities**

- Location Details**
- [XY Location](#)
- [Zoom to County](#)
- [Zoom to Watershed](#)
- [Address Locator](#)
- [Print Map/Results](#)

**Location Details**

Latitude/Longitude: 38.59543, -77.04478

**Watershed Resources Improvement Opportunities**

- [Upland Preservation:](#) 4
- [Upland Restoration:](#) 4



## Maryland Specific Programmatic Datasets in the WRR Assisting in Coastal Ecosystem Protection

- Tier II waters (anti-degradation)
- Wetlands of Special State Concern
- Ecological Sensitive Areas
- Targeted Ecological Areas
- MDP's land use/land cover
- Blue Infrastructure
- Green Infrastructure Network Identification
- Stronghold watersheds
- Aerial imagery
- Stream Use Classification
- State and county parks





## Find Opportunities

**Find Opportunities**

Select a County:  
Dorchester

Select a Watershed:  
All Watersheds

Select Potential Opportunities:

<input type="radio"/> Upland Preservation	<input type="radio"/> Upland Restoration
<input checked="" type="radio"/> Wetland Preservation	<input type="radio"/> Wetland Restoration
<input type="radio"/> Riparian Preservation	<input type="radio"/> Riparian Restoration
<input type="radio"/> Stormwater Natural Infrastructure Preservation	<input type="radio"/> Stormwater Compromised Infrastructure Restoration

Select Score:  ★  ★★  ★★★  ★★★★  ★★★★★

Select Score Operator:

Where Acres is Greater Than (>):

Where Acres is Less Than (<):

**Find Opportunities**

Base Data

Imagery

MD 6 Inch Imagery

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

Registry

Find Opportunities

Location Details

X/Y Location

Zoom to County

Zoom to Watershed

Address Locator

Print Map/Results



## Suitability Analysis: Absolute & Relative Factors



#### Factors for Wetland Preservation

Relative Factors

- in a Blue Infrastructure priority watershed
- in Chesapeake Bay Commission Critical Area (LDA or RCA only)
- is forested
- in a Green Infrastructure area (1 point for "hub"; ½ point for "corridor")
- in a GreenPrint Targeted Ecologic Area
- near (within 200') but not in protected lands
- not in a Priority Funding Area
- in a Sensitive Species Project Review Area (SSPRA)
- within 200' (1 point) or within 600' (½ point) of a stream designated for uses II, III or IV
- in a Stronghold Watershed area 1 (1 point) or 2 (½ point)
- in a Tier II watershed
- in a Wetland of Special State Concern

Absolute Factors

- Must be a wetland
- Cannot already be protected

Navigation controls: Save, Print, Up, Down, 1 / 8, Previous, Next, PDF icon





# watershed resources registry

## Site Selection

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**WRR** Watershed Resources Registry

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Parcel Boundaries / Real Property
  - Parcels
- Basemap
  - Watershed Resources Improvement
  - Watershed Characteristics
  - Waters/Streams
  - Water Quality Impairments
  - Physiographic Region
  - Geology
  - Wetland
  - Soils - Appears If Zoomed In
  - Green Infrastructure
  - Blue Infrastructure
  - Species Related Data
  - Sea Level Rise
  - Base Data
- Imagery
  - MD 6 Inch Imagery

5 - 345. acres

0 25455090 10160 15270 20360 Feet

Open WRR Tools



# watershed resources registry

## Zoom In

The screenshot displays the Watershed Resources Registry interface. At the top, there is a navigation bar with links for EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. Below this is the application title "Watershed Resources Registry" and a search bar. The main content area is divided into a left sidebar and a central map. The sidebar contains sections for "Location Details Results", "Opportunities Results", "Address Results", and "Map Contents". The "Map Contents" section lists various data layers with checkboxes, including "Parcel Boundaries / Real Property", "Basemap", "Watershed Resources Improvement", "Watershed Characteristics", "Waters/Streams", "Water Quality Impairments", "Physiographic Region", "Geology", "Wetland", "Soils - Appears If Zoomed In", "Green Infrastructure", "Blue Infrastructure", "Species Related Data", "Sea Level Rise", "Base Data", "Chesapeake Bay Critical Area", and "Protected Lands". The central map shows a geographic area with a red rectangle highlighting a specific region. A "Zoom In" button is visible on the map. The bottom of the map includes a scale bar and coordinates.





# watershed resources registry

## Location Details

The screenshot displays the Watershed Resources Registry interface. At the top, navigation links include EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. The main header reads "Watershed Resources Registry". A toolbar on the right contains icons for zooming, panning, and other map functions.

On the left, a sidebar lists "Location Details Results", "Opportunities Results", "Address Results", and "Map Contents". Under "Map Contents", several layers are checked, including "Basemap", "Watershed Resources Improvement", "Chesapeake Bay Critical Area", and "Protected Lands".

The central map shows a red-shaded area with a tooltip indicating "5 - 345. acres". A scale bar at the bottom of the map shows distances up to 5490 feet.

On the right, a "Close WRR Tools" panel is open, listing several tools: "Find Opportunities", "Location Details" (highlighted with a red circle), "XY Location", "Zoom to County", "Zoom to Watershed", "Address Locator", and "Print Map/Results".





## Location Details – Print Map/Results

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

### Watershed Resources Registry

Location Details Results

**Watershed Resources Improvement Opportunities**

- [Upland Preservation](#): Not Suitable
- [Upland Restoration](#): Not Suitable
- [Wetland Preservation](#): 5
- [Wetland Restoration](#): Not Suitable
- [Riparian Preservation](#): Not Suitable
- [Riparian Restoration](#): Not Suitable
- [Stormwater Natural Infrastructure Preservation](#): 4
- [Stormwater Compromised Infrastructure Restoration](#):

**Watershed Characteristics:**

[View Watershed Profile](#)

HUC: 020600050601  
 HUC Name: Saint John Creek-Chesapeake Bay  
 Maryland 8 Digit Watershed: 02130401  
 Maryland 12 Digit Watershed: 021304010446

Metadata: [HUC](#) | [MD Watershed](#) | [Stronghold](#)

**Waterways**

Location inside the floodplain.

Metadata: [Floodplain](#)

**Opportunities Results**

**Address Results**

**Map Contents**

5 - 345. acres

Location Details

Latitude/Longitude:  
38.40709, -76.23446

**Watershed Resources Improvement Opportunities**

- [Upland Preservation](#): Not Suitable
- [Upland Restoration](#): Not Suitable
- [Wetland Preservation](#): 5
- [Wetland Restoration](#): Not Suitable
- [Riparian Preservation](#): Not Suitable
- [Riparian Restoration](#): Not Suitable
- [Stormwater Natural Infrastructure Preservation](#): 4
- [Stormwater Compromised Infrastructure Restoration](#): 1

Find Opportunities  
 Location Details  
 X/Y Location  
 Zoom to County  
 Zoom to Watershed  
 Address Locator  
 Print Map/Results

Close WRR Tools

0 14112822 5644 8466 11288 Feet



## Print Map Results

### Watershed Resources Map



Map Projection: State Plane Maryland (NAD83 - Meters)

#### Selected Location - Coordinates

● Latitude/Longitude: 38.40935,-76.23706

#### Watershed Resources Improvement Opportunities

- [Upland Preservation](#): Not Suitable
- [Upland Restoration](#): Not Suitable
- [Wetland Preservation](#): 5
- [Wetland Restoration](#): Not Suitable
- [Riparian Preservation](#): Not Suitable
- [Riparian Restoration](#): Not Suitable
- [Stormwater Natural Infrastructure Preservation](#): 3
- [Stormwater Compromised Infrastructure Restoration](#): 1

#### Watershed Characteristics:

[View Watershed Profile](#)  
 HUC: 020600050601  
 HUC Name: Saint John Creek-Chesapeake Bay  
 Maryland 8 Digit Watershed: 02130402  
 Maryland 12 Digit Watershed: 021304020447

### Selected Location Information

#### Waterways

Location inside the floodplain.

Metadata: [Floodplain](#)

#### Water Quality Impairments

[Metadata](#)

Impairments: Biological, Nutrients

#### Wetlands

Wetlands of Special State Concern: None within 500 ft.

DNR: Type - PFO1A

NWI: Type - Freshwater Forested/Shrub Wetland

Metadata: [WSSC](#) | [DNR](#) | [NWI](#)

#### Green Infrastructure

Location inside a hub

There are no gaps within 500 ft.

There are no corridors within 500 ft.

Metadata: [Hub](#) | [Gap](#) | [Corridor](#)

#### Blue Infrastructure

[Metadata](#)

Infrastructure Distance: 202 ft.

#### Species Related Data

Sensitive Species ID: 4071

Sensitive Species Group: GROUP 1

Location inside a targeted eco area.

High Quality FIDs: unk

Metadata: [SSPRA](#) | [Target Eco](#) | [FIDs](#)

#### Soils

[Metadata](#)

Soil Type: 7

Hydric: Hydric

Drainage: Poorly Drained

Prime Farm Land: Not prime

#### Land Use/Land Cover

Land Use Type (2002): Evergreen Forest

Land Use Type (2007): Evergreen forest

Metadata: [Metadata](#) | [Metadata](#)

#### Chesapeake Bay Critical Area

[Metadata](#)

Location inside the Chesapeake Bay Critical Area

#### Physiographic Region

[Metadata](#)

Province: Atlantic Coastal Plain Province

#### Geology

[Metadata](#)

Name: Quarternary Deposits Undivided



## Blue Infrastructure

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Basemap
  - Watershed Resources Improven
  - Watershed Characteristics
  - Waters/Streams
  - Water Quality Impairments
  - Physiographic Region
  - Geology
  - Wetland
  - Soils - Appears If Zoomed In
  - Green Infrastructure
  - Blue Infrastructure
  - Species Related Data
  - Sea Level Rise
  - Base Data
- Imagery
  - MD 6 Inch Imagery
- iMap

0 1412522 2844 5688 11288 Feet

Open WRR Tools





## Green Infrastructure

**Watershed Resources Registry**

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
  - Corridor
  - Gap
  - Hub
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
- Base Data

Imagery  
 MD 6 Inch Imagery

iMap  
 MDiMap Basemap

0 14112822 5644 8466 11288 Feet

Open WRR Tools





## Sea Level Rise

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
  - 2 feet
  - 2-5 feet
  - 5-10 feet
- Base Data

Imagery  
 MD 6 Inch Imagery

Map  
 MDiMap Basemap

0 649 1298 2596 3894 5192 Feet

Open WRR Tools





## Floodplain

The screenshot displays the Watershed Resources Registry interface. At the top, navigation links include EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. The main title is "Watershed Resources Registry". Below the title is a map of a coastal region with a grid overlay. The map shows various water bodies and floodplains. A legend on the left side of the map is expanded to show "Floodplain" data, which is currently checked. Other legend items include Waters/Streams, Water Body, Water Quality Impairments, Physiographic Region, Geology, Wetland, Soils, Green Infrastructure, Blue Infrastructure, Species Related Data, Sea Level Rise, and Base Data. The map also features a scale bar at the bottom and a "Open WRR Tools" button on the right side.





# watershed resources registry

## Water Body

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Waters/Streams
  - Stream
  - Floodplain
  - Water Body
    - Estuary
    - LakePond
    - Reservoir
    - SwampMarsh
- Water Quality Impairments
- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
- Base Data

0 12892598 5196 7794 10392 Feet

Open WRR Tools





## Species Related Data: Sensitive Species Project Review Area

EPA USACE FWS FHWA SHA MDE DNR Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
  - Sensitive Species Project Review Ar
  - Targeted Eco Area
  - Forest Interior Dwelling Species
- Sea Level Rise
- Base Data

MD 6 Inch Imagery  
 MDiMap Basemap

0 12692558 5186 10382 Feet

Open WRR Tools



# watershed resources registry

## Species Related Data: Targeted Ecological Area

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

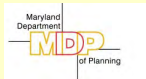
Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
  - Sensitive Species Project Review Ar
  - Targeted Eco Area
  - Forest Interior Dwelling Species
- Sea Level Rise
- Base Data

MD 6 Inch Imagery  
 MDiMap Basemap

0 12992558 5195 754 10392 Feet

Open WRR Tools





# watershed resources registry

## Species Related Data: Forest Interior Dwelling Species

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
  - Sensitive Species Project Review Ar
  - Targeted Eco Area
  - Forest Interior Dwelling Species
- Sea Level Rise
- Base Data

MD 6 Inch Imagery  
MDiMap Basemap

0 12692568 5196 7794 10392 Feet

Open WRR Tools



## Wetlands of Special State Concern

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

Basemap

- Watershed Resources Improvement O
- Watershed Characteristics
- Waters/Streams
- Water Quality Impairments
- Physiographic Region
- Geology
- Wetland
  - Wetlands of Special State Conc
  - NWI
  - DNR
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
- Base Data

0 12992596 5196 7794 10392 Feet

Open WRR Tools





# watershed resources registry

## NWI Wetlands

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results

Opportunities Results

Address Results

Map Contents

- Physiographic Region
- Geology
- Wetland
  - Wetlands of Special State Concern
  - NWI
  - DNR
  - Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
- Base Data

Imagery

- MD 6 Inch Imagery
- MDiMap Basemap

Open WRR Tools





# watershed resources registry

## DNR Wetlands

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results

Opportunities Results

Address Results

Map Contents

- Physiographic Region
- Geology
- Wetland
  - Wetlands of Special State Concern
  - NWI
  - DNR
    - Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
- Base Data

Imagery

- MD 6 Inch Imagery
- MDiMap Basemap

0 10000 20000 30000 40000 Feet

Open WRR Tools





## Water Quality Impairments

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

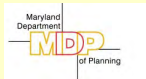
Basemap

- Watershed Resources Improvement Op
- Watershed Characteristics
- Waters/Streams
- Water Quality Impairments
  - Impaired
  - Not Impaired
- Physiographic Region
- Geology
- Wetland
- Soils - Appears If Zoomed In
- Green Infrastructure
- Blue Infrastructure
- Species Related Data
- Sea Level Rise
- Base Data

Imagery

- MD 6 Inch Imagery

Map





## Wetland Preservation

The screenshot displays the Watershed Resources Registry interface. At the top, there is a navigation bar with links to EPA, USACE, FWS, FHWA, SHA, MDE, DNR, and Help. Below this is a search bar and a title "Watershed Resources Registry". The main area is a map showing various land use and resource categories. A legend on the left side of the map is titled "Map Contents" and includes the following items:

- Parcel Boundaries / Real Property
  - Parcels
- Basemap
  - Watershed Resources Improver
    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
      - Not Suitable
      - 1
      - 2
      - 3
      - 4
      - 5
    - Wetland Restoration
    - Riparian Preservation
    - Riparian Restoration
    - Stormwater Natural Infrastr
    - Stormwater Compromised I
  - Watershed Characteristics
  - Waters/Streams

The map itself shows a complex network of blue and purple areas representing different wetland preservation levels, overlaid on a light-colored basemap. A scale bar at the bottom of the map indicates distances from 0 to 10392 feet. On the right side of the map, there is a vertical button labeled "Open WRR Tools".



## Wetland Restoration

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Parcel Boundaries / Real Property
  - Parcels
- Basemap
  - Watershed Resources Improver
    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
      - Not Suitable
      - 1
      - 2
      - 3
      - 4
      - 5
    - Wetland Restoration
      - Not Suitable
      - 1
      - 2
      - 3
      - 4
      - 5
    - Riparian Preservation
    - Riparian Restoration

0 12692598 5166 7794 10392 Feet

Open WRR Tools





## Riparian Preservation

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Parcel Boundaries / Real Property
  - Basemap
    - Watershed Resources Improver
      - Upland Preservation
      - Upland Restoration
      - Wetland Preservation
      - Wetland Restoration
      - Riparian Preservation
        - Not Suitable
        - 1
        - 2
        - 3
        - 4
        - 5
      - Riparian Restoration
      - Stormwater Natural Infrastr
      - Stormwater Compromised I
    - Watershed Characteristics
    - Waters/Streams

0 12692568 5166 7764 10392 Feet

Open WRR Tools





## Riparian Restoration

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

- Basemap
  - Watershed Resources Improvement
    - Upland Preservation
    - Upland Restoration
    - Wetland Preservation
    - Wetland Restoration
    - Riparian Preservation
      - Not Suitable
      - 1
      - 2
      - 3
      - 4
      - 5
  - Riparian Restoration
    - Not Suitable
    - 1
    - 2
    - 3
    - 4
    - 5
  - Stormwater Natural Infrastructure
  - Stormwater Compromised Infrastructure

0 12992598 5196 7794 10392 2446

Open WRR Tools



US Army Corps of Engineers



## Stormwater Natural Infrastructure Preservation

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

**Watershed Resources Registry**

Location Details Results

Opportunities Results

Address Results

Map Contents

- Watershed Resources Improvement Opportunities
  - Upland Preservation
  - Upland Restoration
  - Wetland Preservation
  - Wetland Restoration
  - Riparian Preservation
  - Riparian Restoration
  - Stormwater Natural Infrastructure Preservation
    - Not Suitable
    - 1
    - 2
    - 3
    - 4
    - 5
  - Stormwater Compromised Infrastructure
- Watershed Characteristics
- Waters/Streams
- Water Quality Impairments

0 12992596 5196 7784 10392 Feet

Open WRR Tools





## Stormwater Compromised Infrastructure Restoration

EPA | USACE | FWS | FHWA | SHA | MDE | DNR | Help

### Watershed Resources Registry

Location Details Results  
 Opportunities Results  
 Address Results  
 Map Contents

emap

- Watershed Resources Improvement Opport
  - Upland Preservation
  - Upland Restoration
  - Wetland Preservation
  - Wetland Restoration
  - Riparian Preservation
  - Riparian Restoration
  - Stormwater Natural Infrastructure Pi
    - Not Suitable
    - 1
    - 2
    - 3
    - 4
    - 5
  - Stormwater Compromised Infrastruc
    - Not Suitable
    - 1
    - 2
    - 3
    - 4
    - 5

0 12992598 5196 7784 10392 East

Open WRR Tools



## Recent and Current Events

- A series of training workshops were held from October - December 2012 at several agency locations
- A team of experts is being assembled to consult on the stormwater models
- User website and application are both live
  - [www.watershedresourcesregistry.org](http://www.watershedresourcesregistry.org)
- Site registration being developed
- Currently soliciting feedback from participating agencies
- National roll-out strategy is being developed





# watershed resources registry

## WRR Products



### User Guide

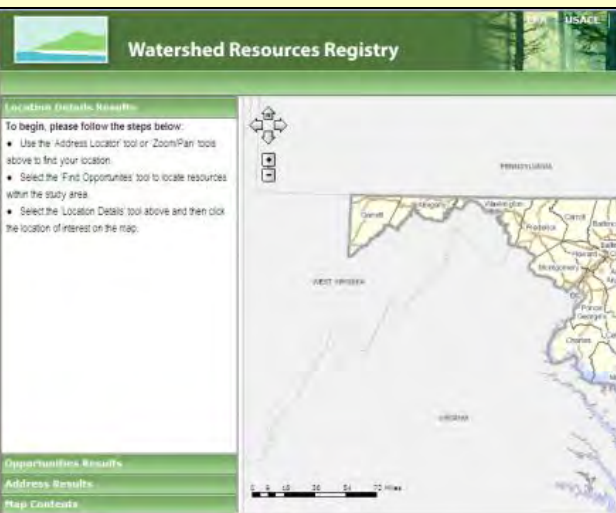


### Integrating Priorities and Achieving a Sustainable Watershed Using the Watershed Resources Registry in the Mattawoman Creek Watershed



August 2011

Prepared by  
Karin R. Bencala  
Interstate Commission on the Potomac River Basin  
for  
Maryland Department of the Environment  
U.S. Environmental Protection Agency





# watershed resources registry

## Thank You and Remember: Your feedback is critical!!!

[www.watershedresourcesregistry.org](http://www.watershedresourcesregistry.org)

The image displays two screenshots of the Watershed Resources Registry website. The left screenshot shows the main navigation menu with the 'Feedback' link circled in red. A blue arrow points to this link. The right screenshot shows the 'Contribute Your Feedback' form, which includes a section for selecting areas of interest. A red arrow points to the 'Which Suitability Analysis/Ecological opportunity are you interested in?' section of the form.





watershed resources registry

# Questions ?





# Thank You Jeff for Putting Me Last... As You Know We Can Only Do Day Trips

**EPA Region 3**

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Brittany Smith

[smith.brittany@epa.gov](mailto:smith.brittany@epa.gov)

